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**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**RIN: 1018-AB52**

**Endangered and Threatened Wildlife and Plants; *Astragalus bibullatus* (Guthrie's Ground-plum) Determined To Be Endangered**

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

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**SUMMARY:** The Service determines Guthrie's ground-plum to be an endangered species under authority of the Endangered Species Act (Act) of 1973, as amended. This rare plant is presently known from only three sites in Tennessee and is endangered throughout its range by habitat alteration; residential, commercial, or industrial development; and livestock grazing. This action extends Federal protection under the Act to Guthrie's ground-plum.

**EFFECTIVE DATE:** October 28, 1991.

**ADDRESSES:** The complete file for this rule is available for public inspection, by appointment, during normal business hours at the Asheville Field Office, U.S. Fish and Wildlife Service, 100 Otis Street, room 224, Asheville, NC 28801.

**FOR FURTHER INFORMATION CONTACT:** Mr. Robert R. Currie at the above address (704/259-0321 or FTS 672-0321).

**SUPPLEMENTARY INFORMATION:**

**Background**

*Astragalus bibullatus* Barneby and Bridges (Guthrie's ground-plum) is a

perennial member of the pea family (Fabaceae) that is presently known to exist only in Rutherford County in Tennessee's central basin. The plant has short stems (5 to 15 centimeters; 2 to 6 inches) that arise from a tap root. Each stem supports 5 to 10 leaves. The leaves are 5 to 10 cm (2 to 4 inches) long and are composed of about 24 small leaflets. The inflorescence is a raceme supporting 10 to 16 purple flowers. The plants flower in April and May. During flowering, the peduncle supporting the inflorescence arches upward. After flowering and as the fruits mature, this peduncle gradually arches downward. The fruits are fleshy pods that usually mature in May and June. At maturity the pods are colored red above and yellow below. *Astragalus bibullatus* superficially resembles the widespread *A. tennesseensis*. However, *A. tennesseensis* can be readily distinguished by its yellow rather than purple flowers, its yellow-brown rather than reddish-topped fruits, and the copious number of hairs found on the plant (Somers and Gunn 1990).

Specimens that would now be assigned to *A. bibullatus* were apparently first collected in about 1881 by the early Tennessee botanist, Augustin Gattinger. For over 100 years this material was assigned to *A. crassicaarpus*, which is a related but morphologically and geographically distinct species. The Rutherford County, Tennessee, type locality for the species was rediscovered in 1980 by Milo J. Guthrie of the Tennessee Department of Conservation (Department). Botanists familiar with the genus *Astragalus* determined that the plants found by Guthrie represented a new species. Barneby and Bridges described *Astragalus bibullatus* in 1987 using material collected from Guthrie's 1980 site by Jerry and Carol Baskin (University of Kentucky at Lexington) and others (Barneby and Bridges 1987).

Guthrie's ground-plum is endemic to the cedar glades of middle Tennessee. All sites are associated with thin-bedded, fossiliferous Lebanon limestone outcroppings that support the unique cedar glade communities found in Tennessee's central basin. The species only grows along glade margins with deeper soil or in areas within the glades that are partially shaded. Soil depths vary between 5 and 20 cm (2 to 8 inches) at the known sites. Cedar glades are typically wet in winter and spring and dry and very hot in summer and fall (Somers and Gunn 1990, Quarterman 1986).

A description of the species' status at each of the three known sites is

provided below. This information is extracted in part from Somers and Gunn (1990).

#### Population 1

Population 1 consists of two colonies. The first colony was discovered by Guthrie and was referred to as the type locality in the above discussion. In 1988 this colony contained 171 plants on a 1.5-acre glade. The site is in private ownership and is not formally protected. The second colony occurs along one edge of a privately owned residential lot located about 0.25 mile from the first colony. In 1990 the site supported about 50 plants. Twenty-five of these occurred within a 100-square-foot area, while the remaining plants were scattered along a road that crosses the site.

In addition to the two colonies described above, there is a group of about 100 plants on a glade located approximately 1 mile northwest of colony 1. The owner of this site is a wildflower enthusiast and is believed to have established this colony with seeds collected from the nearby natural population (Somers, *in litt.*, 1990).

#### Population 2

This population is located about 12 miles from population 1. The site is privately owned and supports an apparently declining population of Guthrie's ground-plum. In 1984 several dozen plants were observed by biologists from the Department. In 1988 only 5 plants were observed during a visit to the site by Guthrie. The years between 1985 and 1988 were very dry in central Tennessee, and this may account for the observed decline in population 2. It is not known if the return of normal rainfall in 1989 and 1990 has resulted in a reversal of the decline observed in the previous years.

#### Population 3

Population 3 is located about 1 mile south of population 1. It was discovered in the spring of 1990 by the Department. Subsequent visits to the site by the Department's botanists revealed the presence of two colonies in this population. Colony 1 contains about 40 plants, while colony 2 contains about 200 plants. The 240 plants in population 3 make it the largest known for *A. bibullatus*. Additionally, Somers (*in litt.*, 1990) describes the glades at this site as pristine.

#### Extirpated Populations

There are believed to be two extirpated populations of Guthrie's ground-plum. The first was in Rutherford County and is represented by material collected near the La Vergne

railroad station in 1901 by Augustin Gattinger. The landscape in this area has been radically changed since 1901, and it is unlikely that the species still survives at this location.

Another population is believed to have been extirpated from Davidson County, Tennessee. Vegetative material that was collected in 1948 from a site just north of the Rutherford/Davidson County line by botanists from the University of Tennessee at Knoxville has been identified by Barneby as *A. bibullatus*. The site from which the plant was collected is now under the waters of Percy Priest Reservoir. An examination of the glades adjacent to this part of the reservoir revealed that they were badly abused by vehicle travel. *Astragalus bibullatus* was not found in this area, and it is unlikely that the species still exists in Davidson County.

Federal government actions on this species began in 1987 with the issuance of a contract to the Department for a status survey. The Department conducted the survey during the 1987, 1988, and 1989 field seasons. During this survey they visited over 300 cedar glades and cedar glade remnants. Based upon the preliminary results of the Department's survey, *A. bibullatus* was added as a category 2 species to the Service's notice of review for native plants when it was revised in February 1990 (55 FR 6184).

Category 2 species are those for which the Service has information which indicates that proposing to list them as endangered or threatened may be appropriate but for which substantial data on biological vulnerability and threats are not currently known or are not on file to support the preparation of rules. This was the case with *A. bibullatus* in February 1990. Information on current threats, biological vulnerability, distribution, and status was provided by the Department's final report on the status of Guthrie's ground-plum. This report was received and accepted by the Service in the spring of 1990. Based upon the information provided in this report, the Service developed a proposed rule to list the species as endangered. The proposal was published in the *Federal Register* on October 10, 1990 (55 FR 41245).

#### Summary of Comments and Recommendations

In the October 10, 1990, proposed rule and associated notifications, all interested parties were requested to submit factual reports or information that might contribute to the development of a final rule. Appropriate State

agencies, county governments, Federal agencies, scientific organizations, and other interested parties were contacted and requested to comment. A newspaper notice announcing the Federal Register publication of the proposed rule was published in the Daily News Journal, Murfreesboro, Tennessee, on October 27, 1990.

Two written responses to the proposed rule were received from private individuals during the comment period. One individual provided information on threats to the species and expressed support for the proposed addition of Guthrie's ground-plum to the Federal list of endangered species. The other individual's comments were nonsubstantive in nature. The information on threats to the species has been incorporated into this rule. The Tennessee Department of Conservation reiterated their support for the addition of Guthrie's ground-plum in a letter received after the close of the official comment period.

#### Summary of Factors Affecting the Species

After a thorough review and consideration of all information available, the Service has determined that Guthrie's ground-plum should be classified as an endangered species. Procedures found at Section 4(a)(1) of the Act (16 U.S.C. 1531 *et seq.*) and regulations (50 CFR Part 424) promulgated to implement these listing provisions were followed. A species may be determined to be an endangered or threatened species due to one or more of the five factors described in Section 4(a)(1). These factors and their application to *Astragalus bibullatus* Barneby and Bridges (Guthrie's ground-plum) are as follows:

**A. The present or threatened destruction, modification, or curtailment of its habitat or range.** The three known naturally occurring populations of *Astragalus bibullatus* are within a short distance of the rapidly growing middle-Tennessee city of Murfreesboro. Residential, commercial, and industrial development associated with this growth threatens to destroy or adversely modify the remaining habitat for the species. All of the known *A. bibullatus* locations are threatened by the encroachment of more competitive herbaceous vegetation and/or woody plants, such as cedar, that overshadow the species and compete for limited water and nutrients. Active management to reduce or eliminate this encroachment is required to ensure that the species continues to survive at all sites. Both the species and its habitat are vulnerable to livestock grazing, and

this factor is a threat to all populations. Direct destruction of habitat for commercial, residential, or industrial development; intensive right-of-way maintenance activities; off-road-vehicle traffic; and trash dumping are the most significant threats to the species at this time (Somers and Gunn 1990; Horn, *in litt.*, 1990).

**B. Overutilization for commercial, recreational, scientific, or educational purposes.** Little or no commercial trade in *Astragalus bibullatus* is known to exist at this time, although a small private population is believed to have been artificially established by a local wildflower enthusiast. Collecting for scientific purposes, wildflower gardening, or as a novelty would pose a significant threat to this species since all three populations are very small and cannot support collection.

**C. Disease or predation.** Disease and predation are not known to be factors affecting the continued existence of the species at this time.

**D. The inadequacy of existing regulatory mechanisms.** *Astragalus bibullatus* is listed as an endangered plant in Tennessee under that State's Rare Plant Protection and Conservation Act of 1985. This protects the species from taking without the permission of the landowner or land manager. When the species is added to the Federal list of endangered and threatened species, additional protection from taking is provided by the Act when the taking is in violation of any State law, including State trespass laws. Protection from inappropriate commercial trade will also be provided.

**E. Other natural or manmade factors affecting its continued existence.** The only other additional factor that threatens *Astragalus bibullatus* is the extended drought condition that the species faced through the fall of 1988. This extremely dry weather may be responsible for the decline observed in population 2 and may have adversely affected the other populations. These conditions probably caused higher than normal mortality of mature plants and seedlings and, if they had continued to the present time, could have had an adverse effect on the survival of *A. bibullatus*. Under normal population levels, losses due to drought would not be expected to have a significant impact on the species. However, given the limited number of individuals in the known populations, drought-associated losses could cause the extirpation of the species from some sites or result in the species' extinction.

The Service has carefully assessed the best scientific and commercial

information available regarding the past, present, and future threats faced by this species in determining to make this rule final. Based on this evaluation, the preferred action is to list *Astragalus bibullatus* as an endangered species. The species is known to occur in only three small, geographically limited populations that are threatened by factors which could render the plant extinct throughout all or a significant portion of its range. The appropriate classification for such species is endangered, as defined in Section 3(6) of the Act. Critical habitat is not being designated for the reasons discussed below.

#### Critical Habitat

Section 4(a)(3) of the Act, as amended, requires that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. The Service finds that designation of critical habitat is not presently prudent for this species. The species is extremely rare, existing at only three locations. All populations are small, and the loss of even a few individuals to activities such as collection for scientific purposes or wildflower gardening could extirpate the species from its known locations. Taking, without permits, is prohibited by the Act from locations under Federal jurisdiction; however, none of the known populations are under Federal jurisdiction. Although the Tennessee Rare Plant Protection and Conservation Act of 1985 prohibits collection of *Astragalus bibullatus* without permission from the landowner, unlawful taking is difficult to enforce. Publication of critical habitat descriptions and maps would increase the vulnerability of the species without significantly increasing population. The owners and managers of all the known populations of *Astragalus bibullatus* have been made aware of the plant's location and of the importance of protecting the plant and its habitat. No additional benefits would result from a determination of critical habitat. Therefore, the Service concludes that it is not prudent to designate critical habitat for *Astragalus bibullatus*.

#### Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened under the Endangered Species Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing encourages and results in

conservation actions by Federal, State, and private agencies, groups, and individuals. The Endangered Species Act provides for possible land acquisition and cooperation with the States and requires that recovery actions be carried out for all listed species. The protection required of Federal agencies and the prohibitions against certain activities involving listed plants are discussed, in part, below.

Section 7(a) of the Act, as amended, requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as endangered or threatened and with respect to its critical habitat, if any is being designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(2) requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of a listed species or to destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into formal consultation with the Service. All of the known populations of *Astragalus bibullatus* are on privately owned land with no known Federal involvement at present.

The Act and its implementing regulations found at 50 CFR 17.61, 17.62, and 17.63 set forth a series of general prohibitions and exceptions that apply to all endangered plants. All trade prohibitions of Section 9(a)(2) of the Act, implemented by 50 CFR 17.61, will apply. These prohibitions, in part, make it illegal for any person subject to the jurisdiction of the United States to import or export, transport in interstate or foreign commerce in the course of a commercial activity, sell or offer for sale

this species in interstate or foreign commerce, or to remove and reduce to possession the species from areas under Federal jurisdiction. In addition, for endangered plants, the 1988 amendments (Pub. L. 100-478) to the Act prohibit the malicious damage or destruction on Federal lands and the removal, cutting, digging up, or damaging or destroying of endangered plants in knowing violation of any State law or regulation, including State criminal trespass law. Certain exceptions apply to agents of the Service and State conservation agencies. The Act and 50 CFR 17.62 and 17.63 also provide for the issuance of permits to carry out otherwise prohibited activities involving endangered species under certain circumstances.

It is anticipated that few trade permits would ever be sought or issued because the species is not common in cultivation or in the wild. Requests for copies of the regulations on listed plants and inquiries regarding prohibitions and permits may be addressed to the Office of Management Authority, U.S. Fish and Wildlife Service, 4401 N. Fairfax Drive, room 431, Arlington, Virginia 22203 (703/358-2104).

#### National Environmental Policy Act

The Fish and Wildlife Service has determined that an Environmental Assessment, as defined under the authority of the National Environmental Policy Act of 1969, need not be prepared in connection with regulations adopted pursuant to section 4(a) of the Endangered Species Act of 1973, as amended. A notice outlining the Service's reasons for this determination was published in the *Federal Register* on October 25, 1983 (48 FR 49244).

#### References Cited

- Barneby, R.C., and E.L. Bridges. 1987. A new species of *Astragalus* (Fabaceae) from Tennessee's central basin. *Brittonia* 39(3):358-363.
- Quarterman, E. 1986. Biota, ecology, and ecological history of cedar glades: Introduction. *ASB Bulletin* 33(4):124-127.
- Somers, P., and S.C. Gunn. 1990. Status report, *Astragalus bibullatus* Barneby and Bridges. Unpublished report to the Southeast Region, U.S. Fish and Wildlife Service. 33 pp.

#### Author

The primary author of this final rule is Mr. Robert R. Currie, U.S. Fish and Wildlife Service, 100 Otis Street, room 224, Asheville, North Carolina 28801 (704/259-0321 or FTS 672-0321).

#### List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, and Transportation.

#### Regulation Promulgation

Accordingly, part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, is amended as set forth below:

#### PART 17—[AMENDED]

1. The authority citation for part 17 continues to read as follows:

**Authority:** 16 U.S.C. 1361-1407; 16 U.S.C. 1531-1544; 16 U.S.C. 4201-4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.12(h) by adding the following, in alphabetical order under Fabaceae to the List of Endangered and Threatened Plants:

#### § 17.12 Endangered and threatened plants.

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Species		Historic range	Status	When listed	Critical habitat	Special rules
Scientific name	Common name					
Fabaceae—Pea family:						
<i>Astragalus bibullatus</i> .....	Guthrie's ground-plum .....	U.S.A. (TN).....	E	437	NA	NA

Dated: September 6, 1991.

Richard N. Smith,

*Acting Director, Fish and Wildlife Service.*

[FR Doc. 91-23147 Filed 9-25-91; 8:45 am]

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